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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,393

11/10/2006

Patrick Lenoir

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EXAMINER

GRAVINI, STEPHEN MICHAEL

ART UNIT

PAPER NUMBER

3743

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,393	<b>Applicant(s)</b> LENOIR, PATRICK	
	<b>Examiner</b> Stephen M. Gravini	<b>Art Unit</b> 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 103***

Claims 1-8, 11-13, 15-16, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikkila et al. (US 6,511,015) in view of Smith, Jr. (US 2,174,225).

The claims are reasonably and broadly construed, in light of the accompanying specification, to be disclosed by Heikkila, as comprising:

gas-heated infrared radiant elements **24, 26** arranged next to one another so as to form a unit, wherein the installation heats the web without contacting the web with a heat surface,

said unit comprising at least two adjacent rows of gas-heated infrared radiant elements stretching out in a transversal direction of the web substantially over an entire width of the web (figure 1),

wherein said infrared drier comprises a recycling device **18, 14, 22** recycling, at least partially, combustion gases, wherein said infrared drier installation comprises a device preventing suction of cold air between two adjacent rows of radiant elements in said unit,

wherein the device **38, 34, 42** preventing suction of cold air between two adjacent rows of radiant elements fills a space between the two adjacent rows of radiant elements. Heikkila also discloses the claimed means to avoid the suction of cold air between two adjacent rows of radiant elements is a sealing gasket **28**, wherein said

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drier installation comprises devices that form an insulating thermal arc stretching out to the neighborhood of the backside of the radiant elements (figure 1), wherein said means that form an insulating thermal arc have peripheral walls stretching out to the neighborhood of the web, at least along the lateral edges and the upstream transversal edge of the set of radiant elements (figure 2B), wherein each radiant element has first detachable connecting devices adapted to cooperate with second detachable complementary connecting devices coupled by at least one fixed pipe supplying gas, combustion air or a mixture of gas and air; the first and second detachable connection devices, said detachable connection are for part of a quick connect coupling (figure 4), wherein the first and the second connection devices are designed so as to oppose a preset maximal resistance and to yield, in a reproducible way, to a load force that exceeds this maximal resistance (column 3 line 50 through column 4 line 27), wherein said drier installation has for each row of radiant elements a corresponding gas tube, which has, for each radiant element, a fixed pipe that supplies gas to the said radiant element, and wherein each radiant element has on its backside a back tubing supplying a mixture of air and gas that is adapted to be directly coupled in a detachable and tight way with the corresponding fixed gas pipe, in which the fixed pipe or the back tubing has an air inlet opening that communicates with the air tube to form the mixture of air and gas (column 4 lines 28-63), wherein for each row of radiant elements, a combustion air supply tube placed between the radiant elements and the corresponding gas tube, and wherein for each radiant element, the combustion air tube has opposite openings respectively made in two opposite regions of the wall of the air tube, a first opening that

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is made in a first region adjacent to the radiant element, and a second opening that is made in a second region adjacent to the gas tube, and wherein through each of the openings passes the corresponding fixed pipe or the corresponding back tubing (figure 4), wherein said drier installation has first collection devices to collect downstream the radiant elements at least a part of the warm combustion gases produced by the said radiant elements, and first blowing devices to blow on the passing web, downstream the first collection devices, a gaseous mixture that is warmed up by these warm gases (column 5 lines 15-35) , wherein said drier installation has several ventilators, arranged according to a row stretching out in the transversal direction of the passing web, in which each ventilator is connected to collection hoods and to blowing hoods, respectively covering a part of the width of the passing web (figure 1), wherein each ventilator is situated above the said collection and blowing hoods, adjacent to the corresponding radiant elements, in relation to the said hoods (column 16 lines 28-48, wherein each radiant element comprise a locking device to lock said radiant element in its working position (figure 1), wherein each radiant element comprise means to insulate the warm combustion gases from the backside of the said radiant element (figure 4).

Heikkila discloses the claimed invention, as rejected above, except for the claimed device preventing suction of cold air located between each and every element . Smith, another drier installation, discloses those features beginning at column 4 line 49 and continuing through column 7 line 65. Smith discloses a space 13 in combination with means to ensure even heating and a temperature control apparatus and cooling elimination or reduction which meets the claimed device preventing suction of cold air

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located between each and every element because the structure and function disclosed meet every limitation now claimed. It would have been an obvious to one skilled in the art to provide those disclosed Smith features to Heikkila for the purpose of maximizing dryer efficiency by providing optimum heat and air flow in an infrared drying application.

Claims 9-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikkila in view of Smith. Heikkila in view of Smith discloses the claimed invention, as rejected above, except for the claimed tight way passage and gas injector location. It would have been an obvious matter of design choice to provide those features to Heikkila in view of Smith, since the invention as claimed would be performed by the prior art, regardless of the claimed location arrangement.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikkila in view of Smith in view of Riepe et al. (US 6,665,950). Heikkila in view of Smith discloses the claimed invention, as rejected above, except for the claimed peripheral jacket and cold air infiltration means. Riepe, another drier installation, discloses those features at column 3 lines 15-60. It would have been an obvious to one skilled in the art to provide those features to Heikkila in view of Smith for the purpose of maximizing dryer efficiency by providing optimum heat and air flow in an infrared drying application.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Other prior art references cited with this action contain one or more claim features but those references are not relied upon in rejecting the claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Gravini whose telephone number is 571 272 4875. The examiner can normally be reached on normal weekday business hours (east coast time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth B. Rinehart can be reached on 571 272 4881. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen Gravini/  
Primary Examiner, Art Unit 3743